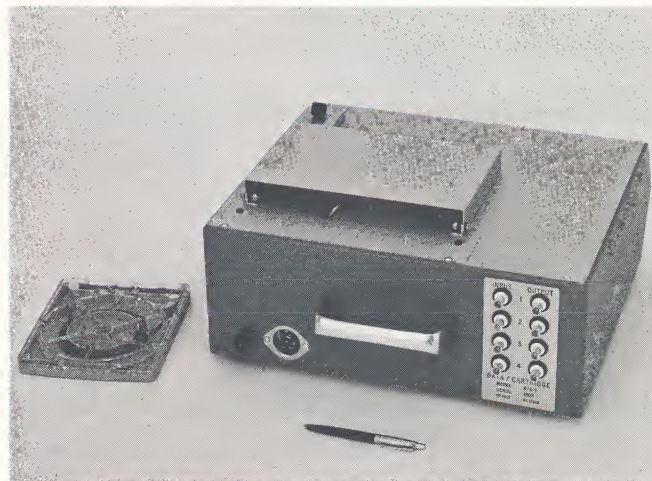




Model D/C-1, front view, with medium size Fidelipac® tape cartridge.



Model D/C-1, rear view.

## THE DATA/CARTRIDGE PORTABLE INSTRUMENTATION CARTRIDGE TAPE RECORDER

The Data/Cartridge Model D/C-1 Cartridge Tape Recorder uses any standard size Fidelipac® tape cartridge containing endless magnetic tape loops of any length up to 1700 feet. This 34-pound four-speed (or two-speed) machine may be easily carried by its handle, or rack mounted. It is capable of recording and reproducing up to four data channels, with plug-in solid-state electronics, interchangeable between standard 40% deviation FM and Direct type electronics.

### SIMPLICITY OF OPERATION

Fidelipac® tape cartridges are available directly from the Data/Cartridge plant, or from Fidelipac® established dealers everywhere. Cartridges are normally provided with ¼ inch wide 1 mil base Mylar tape in endless loop lengths from three feet up to 1700 feet. They may be loaded or unloaded in two seconds, even with gloves on. There is no fussing with reels or risky handling of tape. No rewind time is required, as the end of the tape loop is also the beginning of the loop. The tape automatically stops itself at the end of the loop, if desired (metal foil sensed by end-of-tape sense head), or loops may be run continuously. The user requires no skill to operate or load the machine. Mechanical adjustments are completely eliminated, since they are left out of the recorder's basic design. Full unattended operation with high reliability is the result, an innovation for tape recorders!

### INSTRUMENTATION QUALITY

The D/C-1 recorder utilizes standard (I.R.I.G.) type instrumentation electronics, compatible with other standard instrumentation tape recorders. All solid-state electronics eliminate electronic maintenance. Tape speeds are instantly changed through two or four standard speeds by panel controls. They are: 1½, 3¾, 7½ and 15 inches per second. Single and dual speeds are optional. Metal-faced precision microgap heads are provided with either two or four tracks and are compatible with I.R.I.G. standards. Magnetic tape life is exceptional, due to unusually low hold-back tape tension and gentle tape handling through the drive design and cartridge tape path. Up to 35,000 passes over the heads are possible before the tape is worn out. Start and stop time is in the low milliseconds, at all tape speeds, with no tape stretch or overshoot. This allows precise tape control, with no tape wasted in starting and stopping; also brakes and tape servo-controls are eliminated. Data may be recorded almost instantly, upon command.

### RELIABILITY

Elimination of brakes, hold-back tension servo-controls, tape supply reel motor, and many other mechanical components, provide a high reliability bonus with this type of tape transport. The accompanying mechanical adjustments also being eliminated, operation is possible for long unattended periods with little or no maintenance requirements, and no mechanical adjustments. A synchronous motor and a drive belt, driving a precision ground and polished capstan, through a dynamically balanced flywheel, are the only moving parts in the Model D/C-1 Cartridge Tape Recorder. The recorder reliability combined with the fully enclosed tape cartridge provides an instrument that allows the user to concentrate fully on his application, not on the recorder.

### FAST FORWARD OPTION

A servo-controlled variable speed fast forward is an optional accessory. This unique single-knob controlled feature allows rapid searching for the previously recorded data, under precise control of the operator. Tape may be quickly run close to the previously recorded data, then slowed down under full control to avoid passing over the information. This feature eliminates the need for reversing the tape loop direction of travel to search for desired data previously recorded, simplifying the tape path and allowing the use of the reliable field proven Fidelipac® tape cartridges. The tape will also stop automatically upon reaching the foil stop (optional) in the fast forward mode.

### ERASING

An optional erase head can be provided which will allow for FM data to be easily erased; but any directly recorded data on one or more channels requires an optional erase oscillator for A.C. erase. Unless continuous cycles of record, reproduce, erase (in that order) are required, it is normally desirable to erase using a bulk tape degausser. The tape may be simply and quickly degaussed right in the cartridge by passing the bulk tape degausser over the bottom of the cartridge, the same way a reel of tape is normally erased. Simple audio tape degaussers are sufficient to clean the tape to virgin level, and are obtainable economically from sources everywhere.

**DATA/CARTRIDGE**

Rep: TRAVCO Associates, Inc  
45 North Station Plaza  
Great Neck, L.I., N.Y. 11021  
Tel: (516) HU7-9666



## RECORDER SPECIFICATIONS

**Tape Speeds:** . . . . . 17½, 3¾, 7½ and 15 ips is standard; or any single, or 2 adjacent speeds available on special order.

**Models:** . . . . . Basic recorder furnished either with two- or four-track microgap instrumentation heads, and any combination of FM and Direct Record plug-in electronics, up to four record and/or reproduce.

**Wow and Flutter:** . . . . . Less than 0.1% RMS over the range of 0 to 300 cps at 7½ ips.

**Cartridges:** . . . . . Uses large or medium size Fidelipac® cartridges. Accommodates up to 1,700 feet of lubricated, ¼", 1 mil base Mylar tape in an endless loop; maximum tape footage provides 42 minutes recording time at 7½ ips, or 84 minutes at 3¾ ips, etc.

**Heads:** . . . . . Microgap, 2 track or 4 track metal faced. Three heads, consisting of Record, Reproduce, and choice of either erase or end-of-tape sense head furnished as standard.

**Erase:** . . . . . D.C. erase is suitable for FM recorded data; but if Direct Recorded data is to be erased an optional erase oscillator is required.

**Bias:** . . . . . High Frequency A.C. at 250 kc. (for Direct Recording).

**Power Requirements:** . . . . . Approximately 30 watts at 105 to 125 v.a.c., 60 cps.

**Dimensions:** . . . . . 6" high by 16" wide by 15" deep. (Rack mount accessory is 7" high, for 19" rack width.)

**Weight:** . . . . . 34 lbs. approximately, complete with full set of four record and four reproduce electronics.

**Electronics:** . . . . . Miniature, all-solid-state, on separate plug-in epoxy-glass circuit boards; units are readily replaceable, but seldom require replacement or maintenance; FM record and reproduce electronics are interchangeable with Direct. Tuning elements and equalizers are also plug-in type.

## ELECTRONIC SPECIFICATIONS

### DIRECT RECORDING

#### FREQUENCY RESPONSE RECORD/REPRODUCE:

Tape Speed	Standard Bandwidth RMS Signal-to-Noise at 38 db. *Frequency Response	Standard Bandwidth RMS Signal-to-Noise at 42 db. *Frequency Response	Double Bandwidth RMS Signal-to-Noise at 37 db. *Frequency Response
15 ips	50-30,000 cps	300-30,000 cps	300-50,000 cps
7½ ips	50-15,000 cps	300-15,000 cps	300-25,000 cps
3¾ ips	50- 7,500 cps	300- 7,500 cps	300-12,500 cps
17½ ips	50- 3,750 cps	300- 3,750 cps	300- 7,500 cps

\*Plus or Minus 3 db, and referred to 1.0 Volt RMS and 1% distortion at 1000 cps. If bias set to 3% distortion (as in audio applications) 12 db can be added to all figures.

**Equalization:** . . . . . Plug-in module (one for each tape speed), plugs into reproduce card.

**Bias Frequency:** . . . . . 250 kc.

**Total Harmonic Distortion:** . . 1% at 1000 cps.

**Input Level:** . . . . . 1 Volt RMS (0.1 Volt to 10 Volts RMS adjustable by pot.), unbalanced to ground.

**Input Impedance:** . . . . . 100,000 ohms.

**Output Level:** . . . . . 1 Volt RMS across 10,000 ohms at normal recording level (1% distortion).

**Output Impedance:** . . . . . Output is developed across 200 ohms in series with 25 mfd., unbalanced to ground. Maximum loading, 1000 ohms.

#### Direct Record Amplifier

**Controls:** . . . . . Level Control; Bias Level; Distortion Adjustment.

#### Direct Reproduce Amplifier

**Controls:** . . . . . Level Control; Equalization Trimmer.

### FM RECORDING

#### FREQUENCY RESPONSE RECORD/REPRODUCE:

Tape Speed	Single Bandwidth Center Carrier Frequency	Single Bandwidth *Freq. Response	Single Bandwidth RMS Signal-to-Noise	† Double Bandwidth Specifications
15 ips	13.5 Kc.	0 - 2,500 cps	38 db	Twice the frequency response shown, for any given tape speed, at approximately 2 db lower signal-to-noise ratio than for single bandwidth.
7½ ips	6.75 Kc.	0 - 1,250 cps	41 db	
3¾ ips	3.37 Kc.	0 - 625 cps	38 db	
17½ ips	1.68 Kc.	0 - 312 cps	36 db	

\*Plus or Minus ½ db, and based upon plus or minus 40% deviation for full scale signal (1 Volt RMS). Figures are for large cartridge, with full tape load.

† Center carrier frequencies are double the standard frequencies at each tape speed.

**Total Harmonic Distortion:** . . Less than 1.0%.

**Linearity:** . . . . . DC (at all tape speeds) is 0.5% of full bandwidth.

**D.C. Drift:** . . . . . Less than 2% (overall) of full bandwidth for a change of temperature in the range 40 deg. F to 120 deg. F, following initial warm-up of several minutes, combined with a line voltage variation of 105 to 125 Volts.

**Input Level:** . . . . . 1 Volt RMS (0.25 Volt to 10 Volts RMS adjustable by pot.), unbalanced to ground.

**Input Impedance:** . . . . . 20,000 ohms minimum, unbalanced to ground.

**Output Level:** . . . . . 1 Volt across 10,000 ohms for plus or minus 40% deviation (100% Modulation).

**Polarity:** . . . . . A positive input signal produces an increase in frequency.

#### FM Center Frequency Tuning

**Elements and Filters:** . . . Plug-in Record Amplifier center frequency module (one for each tape speed). FM Limiter and FM Discriminator for FM reproduce are on separate plug-in cards. Only an FM Discriminator is required for each tape speed. (It also contains the low pass output filter for that tape speed.)

#### FM Record Amplifier

**Controls:** . . . . . Level Control; Center Frequency Trimmer; Zero Balance Trimmer.

**FM Discriminator Controls:** . . Level Control; Zero Balance Trimmer; Output Filter Frequency Trimmer.

*The Data/Cartridge Portable Instrumentation Recorders are precision built quality units. All units are fully guaranteed against defects in operation as a result of faulty parts or labor for a period of one year after shipment. Worldwide factory representatives and direct factory service provide customer service and application assistance.*

DATA/CARTRIDGE, INC. • 161 Constitution Drive, Menlo Park, California 94025 • (415) 323-9880

## COMPLETE LIST PRICES

## STANDARD DATA/CARTRIDGE MODEL D/C-1 PORTABLE CARTRIDGE

## INSTRUMENTATION TAPE RECORDER/REPRODUCERS

1-7/8, 3-3/4, 7-1/2, and 15 i.p.s.; with Power Supply for up to

electronics -----

$\frac{1}{2} \times \frac{1}{2}$	$\frac{1}{2} \times \frac{1}{2}$	$\frac{1}{2} \times \frac{1}{2}$	$\frac{1}{2} \times (\frac{1}{2} + \frac{1}{2}) = \frac{1}{2}$	0.00100
$\frac{1}{2} \times \frac{1}{2}$	$\frac{1}{2} \times \frac{1}{2}$	$\frac{1}{2} \times \frac{1}{2}$	$(\frac{1}{2} + \frac{1}{2}) \times \frac{1}{2} = \frac{1}{2}$	0.00100

True, top of Michiganian Drowned Head	45.00
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Four track Microgap Record Head -----	150.00
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Two-track Migratory Ponding: Head	15.00
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or optional:

Direct Record Amplification: Please call 1-800-441-2121.

Direct Bandgap Amplifier: Blue in solid state	75.00
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Direct Payments: Available to eligible people with a physical or mental health condition, who are aged 16 or over, and who are assessed as eligible for care services.

Plug-in Equalizer (specify tape speeds) -----	15.00
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FM Limiter	Block is solid metal	75.00
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unit changes with tape speeds) ----- 120.00
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## CARTRIDGE DATA

Other brands not recommended.

Large Centridrus with 2 + 1700 Sp. + (44) = 1744 + 5 1/2 = 1749	14.38
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Medium Cartridge, less tape	4.75
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Medium Cartridge	with 3 to 300 ft. tape (24 min. + 7 1/2 sec. per 100 ft.)	0.00
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Back Mounting Accessory (7" panel height, 10" width)	75.00
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erase head (not both heads) is optional.

Prices, effective August 1, 1965, subject to change without notice.

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